SAINT LEON INDUSTRIAL PARK (PWS 7100070)
SOURCE WATER ASSESSMENT FINAL REPORT

April 28, 2003

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for Saint Leon Industrial Park, Idaho Falls, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The Saint Leon Industrial Park (PWS #7100070) drinking water system consists of one well. The well was constructed in 1996 and is the main water supply serving the system's approximately 30 people through 2 connections.

Final susceptibility scores are derived from equally weighting system construction scores, hydrologic sensitivity scores, and potential contaminant/land use scores. Therefore, a low rating in one or two categories coupled with a higher rating in other categories results in a final rating of low, moderate, or high susceptibility. With the potential contaminants associated with most urban and heavily agricultural areas, the best score a well can get is moderate. Potential contaminants are divided into four categories, inorganic contaminants (IOCs, i.e. nitrates, arsenic), volatile organic contaminants (VOCs, i.e. petroleum products), synthetic organic contaminants (SOCs, i.e. pesticides), and microbial contaminants (i.e. bacteria). As different wells can be subject to various contamination settings, separate scores are given for each type of contaminant.

In terms of total susceptibility, the Saint Leon Industrial Park well rated high for IOCs, VOCs, SOCs, and microbials. System construction rated moderate and hydrologic sensitivity rated high for the well. Land use scores were moderate for IOCs, VOCs, and microbials, and high for SOCs. The largest influences upon overall scores were the amount of agricultural land surrounding the well and within it's delineation, and unknown information from a missing well log. If a well log had been available scores might have been lower.

No SOCs or VOCs, or microbial contaminants have ever been detected in the tested water. Traces of the IOCs fluoride, and nitrate have been detected in the well. Despite existing in a county with high nitrogen fertilizer use, high herbicide use, and high agricultural chemical use, nitrate has only been detected in concentrations less than 2 parts per million (ppm). The maximum contaminant level (MCL) for nitrate is 10 ppm. The well exists within a priority area for the pesticide atrazine.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources. If the system should need to expand in the future, new well sites should be located in areas with as few potential sources of contamination as possible, and the site should be reserved and protected for this specific use.

For the Saint Leon Industrial Park, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system’s components and its capacity). Actions should be taken to keep a 50-foot radius circle around the wellhead clear of potential contaminants. Any contaminant spills within the delineation should be carefully monitored and dealt with. As much of the designated assessment areas are outside the direct jurisdiction of Saint Leon Industrial Park, collaboration and partnerships with state and local agencies should be established and are critical to success.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan as the delineation contains some urban and residential land uses. Public education topics could include proper farming practices, household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the DEQ or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR
SAINT LEON INDUSTRIAL PARK, IDAHO FALLS, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this assessment means.** Maps showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are included. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is included.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a drinking water protection program should be determined by the local community based on its own needs and limitations. Wellhead or drinking water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The Saint Leon Industrial Park (PWS #7100070) is located in Bonneville County, Idaho (Figure 1). The drinking water system consists of one well which was constructed in 1996 and is the main water supply serving the system's approximately 30 people through 2 connections.

No SOCs or VOCs, or microbial contaminants have ever been detected in the tested water. Traces of the IOCs fluoride, and nitrate have been detected in the well. Despite existing in a county with high nitrogen fertilizer use, high herbicide use, and high agricultural chemical use, nitrate has only been detected in concentrations less than 2 ppm. The MCL for nitrate is 10 ppm. The well exists within a priority area for the pesticide atrazine.

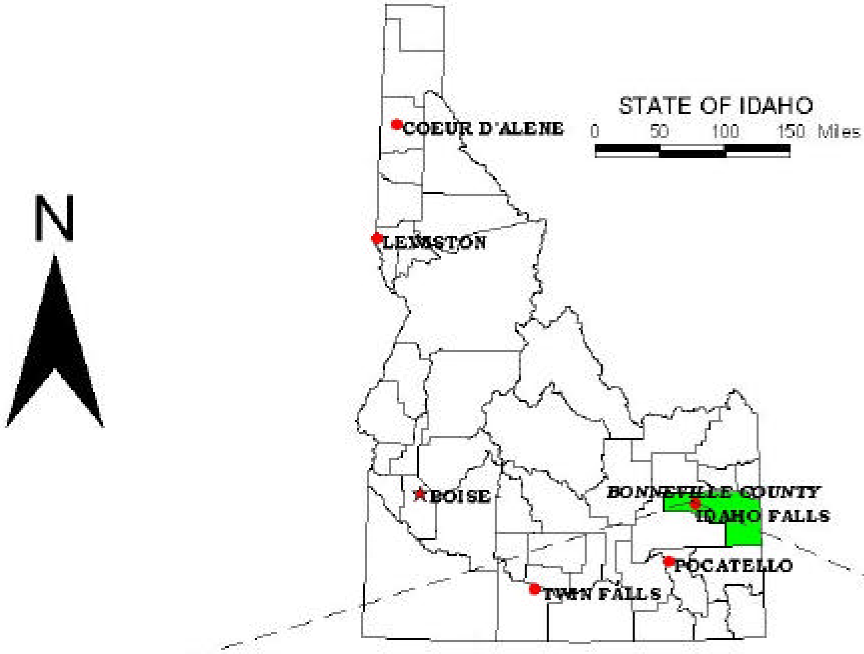
Defining the Zones of Contribution – Delineation

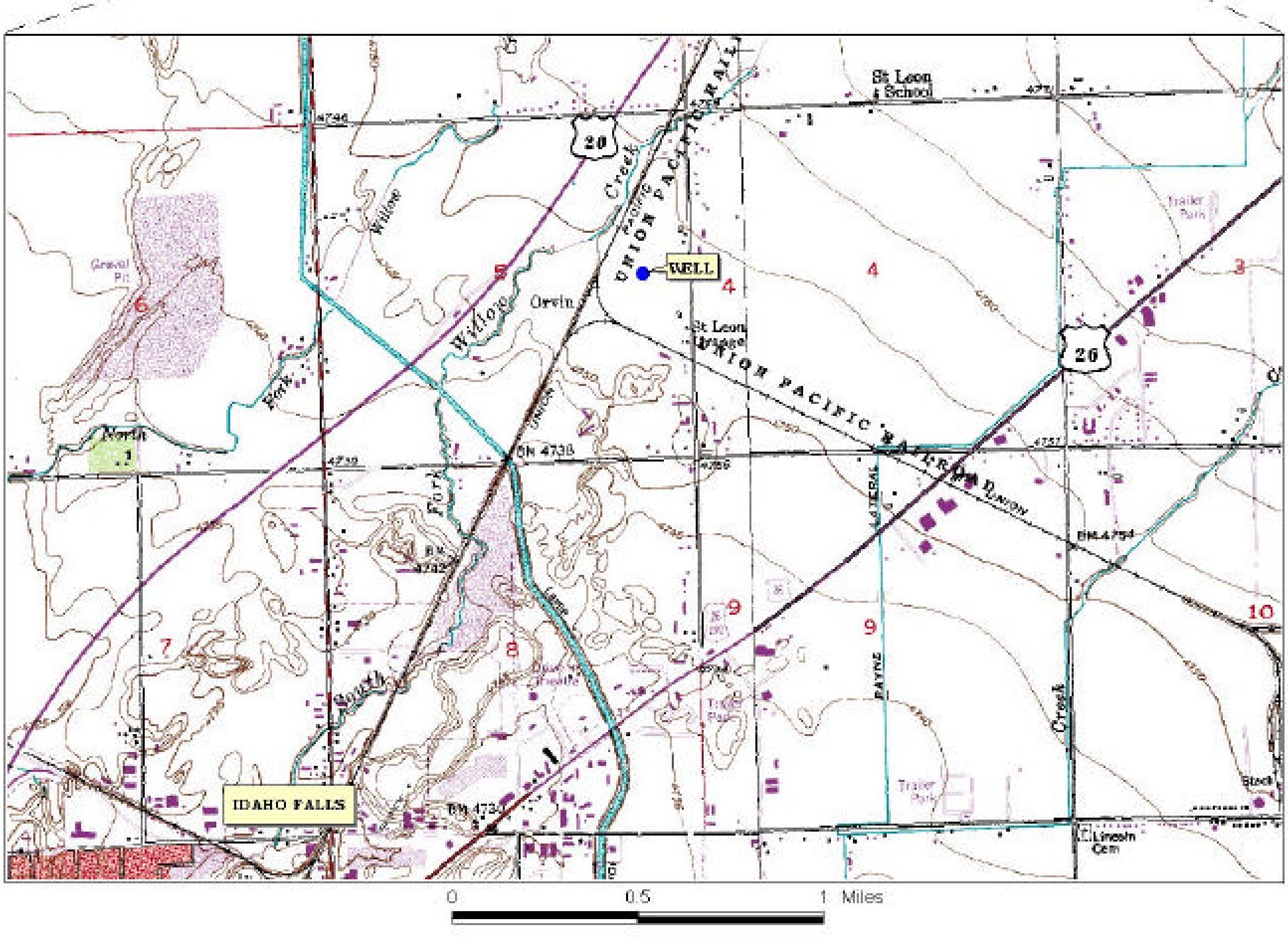
The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time-of-travel (TOT) zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. Washington Group International (WGI) performed the delineation using a computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) TOT for water associated with the Snake River Plain aquifer in the vicinity of the Saint Leon Industrial Park. The computer model used site specific data, assimilated by WGI from a variety of sources including local area well logs, and hydrogeologic reports (detailed below).

Hydrogeologic Conceptual Model

The ESRP is a northeast trending basin located in southeastern Idaho. The 10,000 square miles of the plain are primarily filled with highly fractured layered Quaternary basalt flows of the Snake River Group, which are intercalated with sedimentary rocks along the margins (Garabedian, 1992, p. 5).
Individual basalt flows range from 10 to 50 feet thick, averaging 20 to 25 feet thick (Lindholm, 1996, p. 14). Basalt is thickest in the central part of the eastern plain and thins toward the margins. Whitehead (1992, p. 9) estimates the total thickness of the flows to be as great as 5,000 feet. A thin layer (0 to 100 feet) of windblown and fluvial sediments overlies the basalt. The plain is bounded on the northeast by rocks of the Yellowstone Group (mainly rhyolite) and Idavada Volcanics to the southwest. These rocks may also underlie the plain (Garabedian, 1992, p. 5). Granite of the Idaho batholith borders the plain to the northwest along with sedimentary and metamorphic rocks (Cosgrove et al., 1999, p. 10). The Snake River flows along part of the southern boundary and is the only drainage that leaves the plain. A high degree of connectivity with the regional aquifer system is displayed over much of the river as it passes through the plain. However, some reaches are believed to be perched, such as the Lewisville to Shelly reach. Rivers and streams entering the plain from the south are tributary to the Snake River. With the exception of the Big and Little Wood Rivers, rivers entering from the north vanish into the highly transmissive basalts of the Snake River Plain aquifer.

FIGURE 1. Geographic Location of St. Leon Ind Park





The layered basalts of the Snake River Group host one of the most productive aquifers in the United States. The aquifer is generally considered unconfined, yet may be confined locally by interbedded clay and dense unfractured basalt (Whitehead, 1992, p. 26). Whitehead (1992, p. 22) and Lindholm (1996, p.1) report that well yields of 2,000 to 3,000 gal/min are common for wells open to less than 100 feet of the aquifer. Transmissivities obtained from test data in the upper 100 to 200 feet of the aquifer range from less than 0.1 ft2/sec to 56 ft2/sec (1.0x104 to 4.8x106 ft2/day; Garabedian, 1992, p. 11, and Lindholm, 1996, p. 18). Lindholm (1996, p. 18) estimates aquifer thickness to range from 100 feet near the plain's margin to thousands of feet near the center of the plain. Aquifer thickness varies from 200 to 3,000 feet in models of the regional aquifer, depending on location. Regional ground-water flow is to the southwest paralleling the basin (Cosgrove et al., 1999; DeSonneville, 1972, p. 78; Garabedian, 1992, p. 48; Lindholm, 1996, p. 23). Reported water table gradients range from 3 to 100 ft/mile and average 12 ft/mile (Lindholm, 1996, p. 22). Gradients steepen at the plain's margin and at discharge locations. Estimated effective porosities range from 0.04 to 0.25 (Ackerman, 1995, p.1, and Lindholm, 1996, p. 16). The majority of aquifer recharge results from surface water irrigation activities (incidental recharge), which divert water from the Snake River and its tributaries (Ackerman, 1995, p. 4, and Garabedian, 1992, p. 11). Natural recharge occurs through stream losses, direct precipitation, and tributary basin underflow.

Aquifer discharge occurs primarily as seeps and springs on the northern wall of the Snake River Canyon near Thousand Springs, and near American Falls and Blackfoot. To a lesser degree, discharge also occurs through pumping and underflow (Garabedian, 1992, p. 17).

The Idaho Falls area of the ESRP hydrologic province is located on the northeast margin of the ESRP below the confluence of the Snake and the Henrys Fork rivers. Interpretation of well logs indicates that the basalt and rhyolite of the ESRP is over lain by a 2- to 94-foot-thick layer of sediment. Quaternary basalts are estimated to be 100 to 500 feet thick throughout most of this area (Whitehead, 1992, Plate 3).

Hydraulic conductivity values in the Idaho Falls area are among the highest in the regional aquifer. In a model of the eastern Snake River Plain aquifer, Garabedian (1992, pp. 44-45) used hydraulic conductivity values of 4.4 x 10-2 and 6.1x10-3 ft/sec (3,800 and 527 ft/day) to represent the upper 200 feet of the basalt aquifer in the Idaho Falls area. A value of 7.5 x 10-6 ft/sec (6.5x10-1 ft/day) was used to represent rhyolite. Haskett (1972, p. 11) reports that wells constructed in rhyolite to the north of Idaho Falls have productivities close to those constructed in basalt. This suggests that hydraulic conductivity values higher than those used by Garabedian may be representative of the rhyolite aquifer.

There are no known published water table or flow direction maps specific to the Idaho Falls area. However, flow directions are believed to be similar to those depicted at the regional scale (e.g., Garabedian, 1992, Plate 4). Ground-water flow direction at the local scale is thought to be highly variable because of preferential flow paths through the fractured and layered basalts. The local flow direction is also likely affected by increased ground-water pumping for irrigation west of Idaho Falls (Garabedian, 1992, Plate 9).

Annual average precipitation in the Idaho Falls area is estimated at 10 inches (Kjelstrom, 1995, p. 3). An estimated 2 in./yr enters the aquifer as recharge from precipitation (Garabedian, 1992, p. 20). Garabedian (1992, Plate 8) indicates that the combined areal recharge rate for both irrigation and precipitation is approximately 40 in./yr (0.009 ft/day) in the Idaho Falls area. Seasonal water table fluctuations in excess of 20 feet have been recorded in response to irrigation seepage and canal leakage (see Table 4). Kjelstrom (1995, p. 13) reports river losses of 120,000 acre-feet to the aquifer for the Heise to Lorenzo reach of the Snake River and 280,000 acre-feet for the Lewisville to Shelley reach during the 1980 water year (Figure 2).

River gains of 340,000 acre-feet for the Lorenzo to Lewisville reach are also reported for the same time period. Leakage from the Henrys Fork-Rigby Fan perched aquifer contributes another estimated 588,000 acre-feet/yr to the ESRP north of the Idaho Falls area (IDWR, 1997, p 15).

The analytic element model WhAEM2000 (Kraemer et al., 2000) was used to delineate 3-, 6-, and 10-year capture zones for PWS wells located within the Idaho Falls Area of the ESRP hydrologic province.

The delineated area for the Saint Leon Industrial Park well is a northeast trending sector approximately 0.75 miles wide, which extends from the well to the South Fork Snake River. The actual data used in determining the source water assessment delineation area is available from DEQ upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

Land use within the area surrounding the Saint Leon Industrial Park wells is predominately irrigated agriculture. The well exists within a county of high nitrogen fertilizer use, high herbicide use, and high agricultural chemical use. In addition, the well's delineation intersects a priority area for the pesticide atrazine.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, including educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted in July and August 2002. The first phase involved identifying and documenting potential contaminant sources within the Saint Leon Industrial Park source water assessment area (Figure 2) through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to identify and add any additional potential sources in the delineated areas.

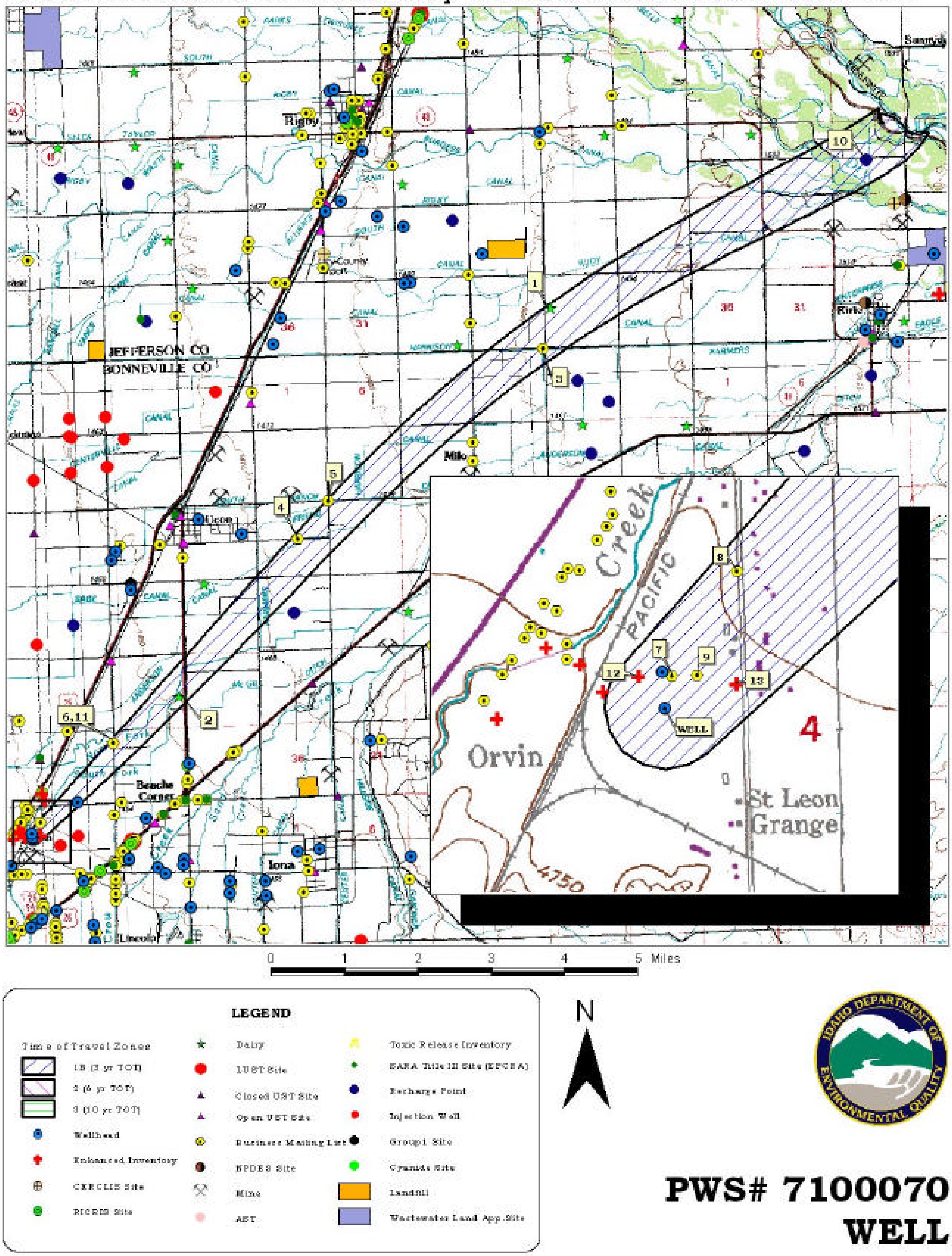
The delineated source water area for the well (Figure 2, Table 1) has its potential contaminants outlined below. Sources include an above ground storage tank (AST), two dairies, and ten service and industrial businesses. In addition, the canal system and South Fork Snake River were considered sources of potential contaminants due their transporting abilities.

Table 1. Saint Leon Industrial Park, Well #1, Potential Contaminant Inventory

SITE	Source Description[1]	TOT[2] ZONE	Source of Information	Potential Contaminants[3]
1	Dairy <= 200 cows	0-3 YR	Database Search	IOC, Microbials
2	Dairy <= 200 cows	0-3 YR	Database Search	IOC, Microbials
3	Janitorial Service	0-3 YR	Database Search	IOC, VOC, SOC
4	Excavating Contractors	0-3 YR	Database Search	IOC, VOC, SOC
5	Paper Label Manufacturers	0-3 YR	Database Search	IOC, VOC
6, 11	Oil/Lubricating Wholesaler; AST	0-3 YR	Database Search	VOC, SOC
7	Storage Unit	0-3 YR	Database Search	IOC, VOC, SOC
8	Lawn Maintenance Company	0-3 YR	Database Search	IOC
9	Printing Company	0-3 YR	Database Search	IOC, VOC
10	Recharge Point	0-3 YR	Database Search	IOC, SOC
12	Building Products	0-3 YR	Database Search	IOC, VOC, SOC
13	Lawn Maintenance Company	0-3 YR	Database Search	IOC
	Canal System	0-3 YR	GIS Map	IOC, VOC, SOC, Microbials
	South Fork Snake River	0-3 YR	GIS Map	IOC, VOC, SOC, Microbials

[2] TOT = time-of-travel (in years) for a potential contaminant to reach the wellhead
[3] IOC = inorganic chemical, SOC = synthetic organic chemical, VOC = volatile organic chemical
AST = aboveground storage tank

FIGURE 2. St. Leon Ind Park Delineation Map and Potential Contaminant Source Locations



PWS# 7100070
WELL

Section 3. Susceptibility Analyses

Each well's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources (Table 2). The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. Attachment A contains the susceptibility analysis worksheets. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone (aquitard) above the producing zone of the well. Slowly draining soils such as silt and clay typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination.

The Saint Leon Industrial Park well rated high for hydrologic sensitivity. The Natural Resource Conservation Service characterized areas soils as moderately- to well-drained and missing information from the well log was given the most conservative, highest score. The well log would contain the thickness of each lithology the drilling rig drilled through, so the vadose zone composition, water table depth, and aquitard thickness could be determined. Since the information was unknown, a worst-case scenario was assumed and the higher score was given.

Well Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. If the wellhead and surface seal are maintained to standards, as outlined in sanitary surveys, then contamination down the well bore is less likely. If the well is protected from surface flooding and is outside the 100-year floodplain, then contamination from surface events is reduced.

Saint Leon Industrial Park's well rated moderate for system construction. The well is located outside of a 100-year floodplain, and according to the 1999 Sanitary Survey for the system, the wellhead and surface seal are maintained. Because of a missing well log, it is unknown if the casing and annular seal extend into low permeability units, or if the highest production comes from more than 100 feet below static water levels.

Current PWS well construction standards are sometimes more stringent than when the wells were constructed. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all PWSs to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction. Some of the regulations deal with screening requirements, aquifer pump tests, use of a downturned casing vent, and thickness of casing. Table 1 of the *Recommended Standards for Water Works* (1997) lists the required steel casing thickness for various diameter wells. Because it is unknown if the well's construction meets all current standards, the well was assessed an additional system construction point.

Potential Contaminant Source and Land Use

The well rated moderate for IOCs, VOCs, microbials, and high for SOCs. The high percentage of irrigated agricultural land within the delineation, and it's location within a county of high fertilizer use, high herbicide use, and high agricultural chemical use contributed the highest amount to the ratings. The well's delineation intersects a priority area for the pesticide atrazine.

Final Susceptibility Ranking

A detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well despite the land use of the area because a pathway for contamination already exists. Additionally, potential contaminant sources within 50 feet of a wellhead will automatically lead to a high susceptibility rating. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0 to 3-year time of travel zone (Zone 1B) contribute greatly to the overall ranking.

Table 2. Summary of Saint Leon Industrial Park Susceptibility Evaluation

Well	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	**Final Susceptibility Ranking**			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Well	H	M	M	H	M	M	H	H	H	H

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Susceptibility Summary

In terms of total susceptibility, the Saint Leon Industrial Park well rated high for IOCs, VOCs, SOCs, and microbials. System construction rated moderate and hydrologic sensitivity rated high for the well. Land use scores were moderate for IOCs, VOCs, and microbials, and high for SOCs. The largest influences upon overall scores were the amount of agricultural land surrounding the well and within it's delineation, and unknown information from a missing well log. If a well log had been available scores might have been lower.

No SOCs or VOCs, or microbial contaminants have ever been detected in the tested water. Traces of the IOCs fluoride, and nitrate have been detected in the well. Despite existing in a county with high nitrogen fertilizer use, high herbicide use, and high agricultural chemical use, nitrate has only been detected in concentrations less than 2 ppm. The MCL for nitrate is 10 ppm. The well exists within a priority area for the pesticide atrazine.

Section 4. Options for Drinking Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective drinking water protection program is tailored to the particular local drinking water protection area. A community with a fully developed drinking water protection program will incorporate many strategies. For Saint Leon Industrial Park, drinking water protection activities should first focus on correcting any deficiencies outlined in the sanitary survey. Actions should be taken to keep a 50-foot radius circle clear around the wellheads. Any spills within the delineation should be carefully monitored and dealt with. As much of the designated protection area is outside the direct jurisdiction Saint Leon Industrial Park, making collaboration and partnerships with state and local agencies and industry groups are critical to the success of drinking water protection. The well should maintain sanitary standards regarding wellhead protection.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A public education program should be a primary focus of any drinking water protection plan as the delineation is near residential land uses areas. Public education topics could include proper household hazardous waste disposal methods, proper care and maintenance of septic systems, and the importance of water conservation to name but a few. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA.

A community must incorporate a variety of strategies in order to develop a comprehensive drinking water protection plan, be they regulatory in nature (i.e. zoning, permitting) or non-regulatory in nature (i.e. good housekeeping, public education, specific best management practices). For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the DEQ or the Idaho Rural Water Association.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Idaho Falls Regional DEQ Office (208) 528-2650

State DEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper (mlharper@idahoruralwater.com), Idaho Rural Water Association, at 1-208-343-7001 for assistance with drinking water protection (formerly wellhead protection) strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

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Attachment A

Saint Leon Industrial Park Susceptibility Analysis Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : ST LEON IND PARK Well# : WELL

Public Water System Number 7100070 11/14/2002 9:22:06 AM

1. System Construction

		SCORE
Drill Date	1996	
Driller Log Available	NO	
Sanitary Survey (if yes, indicate date of last survey)	YES	1999
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
Total System Construction Score		4

2. Hydrologic Sensitivity

Soils are poorly to moderately drained	NO	2
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
Total Hydrologic Score		6

3. Potential Contaminant / Land Use - ZONE 1A

		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	YES	2	0	2	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		4	2	4	2

Potential Contaminant / Land Use - ZONE 1B

		IOC Score	VOC Score	SOC Score	Microbial Score
Contaminant sources present (Number of Sources)	YES	13	8	8	4
(Score = # Sources X 2) 8 Points Maximum		8	8	8	8
Sources of Class II or III leacheable contaminants or	YES	6	4	4	
4 Points Maximum		4	4	4	
Zone 1B contains or intercepts a Group 1 Area	YES	0	0	2	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4
Total Potential Contaminant Source / Land Use Score - Zone 1B		16	16	18	12

Potential Contaminant / Land Use - ZONE II

		IOC Score	VOC Score	SOC Score	Microbial Score
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II		0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0

Potential Contaminant / Land Use - ZONE III

		IOC Score	VOC Score	SOC Score	Microbial Score
Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0

	IOC Score	VOC Score	SOC Score	Microbial Score
Cumulative Potential Contaminant / Land Use Score	20	18	22	14
4. Final Susceptibility Source Score	14	14	14	15
5. Final Well Ranking	High	High	High	High